REMARKS

Claims 1-37 are pending in this application. By this Amendment, claims 1-29 are amended, and claims 30-37 are added. Reconsideration based on the above amendments and following remarks is respectfully requested.

Applicants gratefully acknowledge that the Office Action indicates that claims 15, 16 and 27 include allowable subject matter.

I. Information Disclosure Statement

An Information Disclosure Statement with Form PTO-1449 was filed in the above-captioned patent application on March 15, 2000. Applicants have not yet received from the Examiner a copy of the PTO-1449 initialed to acknowledge the fact that the Examiner has considered disclosed information. The Examiner is requested to initial and return to the undersigned a copy of the Form PTO-1449. For the convenience of the Examiner, a copy of that form is attached. Applicants respectfully request that the Examiner consider and return the original Form PTO-1449 with the next Office Action.

II. Notice Regarding Fees

The Office Action indicates that claims 19-28 have been interpreted by the Examiner as being in independent form. Further, the Office Action indicates that the Examiner views the referencing of prior claims as a shorthand form which does not render the claims in dependent form. Thus, the Office Action asserts that claims 19-28 are being examined and fully treated as independent claims, wherein the balance of the fees shall be charged to the Applicants at the time of mailing of the Office Action. However, Applicants respectfully submit that this interpretation is improper.

37 C.F.R. §1.75(c) states the following:

> One or more claims may be presented in dependent form, referring back to and further limiting another claim or claims in the same application.

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> Claims in dependent form shall be construed to include all the limitations of the claim incorporated by reference into the dependent form.

Since claims 19-28 include all of the limitations of the claim incorporated by reference into the dependent claim, claims 19-28 are in proper dependent form. Therefore, Applicants respectfully submit that claims 19-28 must be examined as independent claims for prosecution on the merits and fee purposes.

III. The Claims Satisfy All Formal Requirements

Although not objected to by the Examiner, claims 1-29 have been amended to correct informalities. No new matter has been added.

IV. The Claims Define Allowable Subject Matter

The Office Action rejects claims 1-12, 17-25, 28 and 29 under 35 U.S.C. §102(e) as unpatentable over U.S. Patent No. 6,314,530 to Mann (hereinafter "Mann"); and claims 13, 14 and 26 under 35 U.S.C. §103(a) as unpatentable over Mann. These rejections are respectfully traversed.

Mann does not disclose "a first monitor section which performs data transfer to and from a second monitor section, determines a primitive command to be executed based on the received data from said second monitor section, and performs processing for execution of the determined primitive command," and a second monitor section that converts "the debugging command into at least one primitive command in order to reduce the size of an instruction code for realizing the first monitor section or a scale of the first monitor section," as recited in claims 1 and 29.

The Office Action asserts that a debug port 100 in Fig. 1 of Mann is equivalent to a first monitor section as recited in claims 1 and 29. However, as shown in Fig. 2 of Mann, the debut port 100 in Fig. 1 is a trace circuit including a trace cache 200, a trace debug interface logic 216, trace control circuitry 218, and a trace pad interface port 220 for tracing the state of the processor core. See column 6, 12 - column 7, line 26.

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Mann discloses a target system T having an embedded processor device 102 and a system memory 106. The embedded processor device 102 includes a processor core 104 and a debug port 100. See col. 5, lines 42-47. The processor device 102, as shown in Fig. 2, includes trace control circuitry 218 and trace cache 200 that provides trace information for reconstructing instruction execution flow in the processor core 104. Further, the processor device 102 includes trace pad interface port 220 capable of providing trace data while the processor core 104 is executing instructions. See col. 6, lines 12-29. An enhanced embodiment of debug port 100 adds additional signals to allow for pinpoint accuracy and extra functionality, and improve communications speeds for debug port 100.

Before debug information is communicated via the debug port 100 using only conventional JTAG signals, the port 100 is enabled while writing the public JTAG instruction DEBUG into a JTAG instruction register contained within the TAP controller 204. Col. 7, lines 15-19. The JTAG TAP controller 204 accepts standard JTAG zero data and control. When a debug instruction has been written to the JTAG instruction register, serial debug shifter 212 is connected to the JTAG test data input signal TEI and test data output signal TDO, such that commands and data can then be loaded into and read from the debug registers 210.

Although Mann discloses trace control circuitry 218 and trace cache 200 providing trace information for a reconstructing instruction execution flow in processor core 104, they are part of the trace circuit and not a first monitor section, as recited in claims 1 and 29. Thus, trace control circuitry 218 and trace cache 200 cannot be considered as equivalent to the first monitor section, as recited in claims 1 and 29.

Additionally, Mann does not disclose that debug port 100 converts a debugging command into at least one primitive command in order to reduce the size of an instruction code for realizing the first monitor section or a scale of the first monitor section. Mann is

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completely devoid of disclosure that a second monitor section converts a complicated debugging command into a simple and primitive command..

Furthermore, Mann does not disclose that the first monitor section receives data from the second monitor section, and determines a primitive command to be executed based on the received data from the second monitor section, as recited in claims 1 and 29. See page 10, line 1 to page 11, line 16, and page 11, line 17 to page 14, line 5, and Figs. 2 to 4 of the present application. For example, in Fig. 2 of Mann, the interface port 220 does not receive data. Instead, the interface port 220 merely outputs a trace data (TBUS [19:0]) of a processor core, because the interface port 220 is an interface for a trace circuit. See Fig. 2 and column 6, lines 15-27.

Since the configuration of Mann does not include a second monitor section as recited in claims 1 and 29, an increase of processing in a target system. Thus, a complicated circuit, such as a processor device 102 of Mann, is necessitated to realize a debugging function in a hardware.

Also, Mann does not disclose that primitive command includes a command for starting an execution of a user program, a command for writing data to an address on a memory map in a debugging mode and a command for reading data from the address on said memory map, as recited in claim 2. Additionally, Mann does not disclose that the first monitor section includes a control register used for execution of instructions in said central processing unit and having an address thereof allocated on a memory map in a debugging mode, as recited in claims 3 and 4. Finally, Mann does not disclose that the first monitor section includes a monitor RAM into which contents of an internal register of said central processing unit are saved, and having an address thereof allocated on a memory map in a debugging mode, as recited in claims 5 and 6.

For at least these reasons, it is respectfully submitted that claims 1 and 29 are distinguishable over the applied art. Claims 2-28 and 30-37, which depend from claims 1 and

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29, are likewise distinguishable over the applied art for at least the reasons discussed as well as for the additional features they recite. Withdrawal of the rejections under 35 U.S.C. §102(e) and 35 U.S.C. §103(a) is respectfully requested.

V. Conclusion

In view of the foregoing amendments and remarks, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-30 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

James A. Oliff
Registration No. 27,075

Holly N. Sy
Registration No. 50,212

JAO:HNS/cfr

Attachments:
Form PTO-1449 (filed November 29, 1999)
Stamped PTO acknowledgement of receipt

Date: October 21, 2003

OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

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